GIFFORD, KRASS, GROH, SPRINKLE, ANDERSON & CITKOWSKI, P.C. 2701 TROY CENTER DR., SUITE 330, P.O. BOX 7021 TROY, MICHIGAN 48007-7021 (248) 647-6000

CLAIM AMENDMENTS

1. - 37. (Canceled)

38. (Currently Amended) A method of controlling combustion phasing in a homogenous charge compression engine, comprising the steps of:

providing a homogenous charge compression ignition engine of the type operable to compress a combustible mixture of fuel and air until the mixture autoignites without the introduction of a spark, the engine having at least one combustion chamber;

providing a corona discharge device operable to create free radicals and ionize gases when energized and disposed in the gases;

disposing the corona discharge in air;

selectively energizing the corona discharge device to create free radicals and ionize some of the gases in the air;

introducing some of the free radicals and ionized gases into the combustible mixture so as to alter the mixture reactivity of the combustible mixture and to adjust the combustion phasing of the engine; and

adjusting the energizing of the corona discharge device so as to control combustion phasing in the engine.

39. (Currently Amended) The method according to claim 38 [[39]], wherein the engine includes an intake system operable to introduce the combustible mixture, the corona discharge device being disposed in the intake system.

40. (Original) The method according to claim 38, wherein the disposing step comprises disposing the corona discharge device in the combustible mixture of air and fuel.

41. - 54. (Canceled)

55. (Currently Amended) An internal combustion engine utilizing an HCCI combustion strategy, the engine comprising:

an engine housing;

a first and a second cylinder defined in the engine housing;

an intake system operable to introduce a combustible mixture of air and fuel into the cylinders;

a first piston disposed in the first cylinder operable to compress the combustible mixture in the first cylinder until the mixture autoignites without the introduction of a spark;

a second piston disposed in the second cylinder operable to compress the combustible mixture in the second cylinder until the mixture autoignites without the introduction of a spark;

a first corona discharge device selectively operable to introduce ions and free radicals into the combustible mixture introduced into the first cylinder, thereby altering the mixture reactivity of the combustible mixture in the first cylinder and the combustion phasing for the first cylinder;

a second corona discharge device selectively operable to introduce ions and free radicals into the combustible mixture introduced into the second cylinder, thereby altering the mixture reactivity of the combustible mixture in the second cylinder and the combustion phasing for the second cylinder; and

a controller operable to control the first and second corona discharge devices so as to selectively adjust the relative combustion phasing of the first and second cylinders.

56. (Original) The engine according to claim 55, wherein the intake system includes a first runner for introducing the mixture into the first cylinder and a second runner for introducing the mixture into the second cylinder, the first corona discharge device being disposed in the first runner and the second corona discharge device being disposed in the second cylinder.

57. - 71. (Canceled)

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